

## REMARKS

### 2/20/08 Rudolph Declaration

In paragraphs 2 and 3 of the Office Action, the Examiner discredits Mr. Rudolph's declaration because allegedly there is "no showing that the objective evidence of nonobviousness is commensurate in scope with the claims." (3/21/08 Office Action at 2). However, the Examiner appears to have misinterpreted the substance of Mr. Rudolph's declaration. As the Examiner notes in paragraph 3, the primary rejection at issue is anticipation—not obviousness. Mr. Rudolph's declaration was not offered to provide evidence of nonobviousness, since that is not even the rejection at issue in the application. Instead, Mr. Rudolph's declaration was provided to show what Christin et al. teaches to one of ordinary skill in the art. The Examiner is obligated to give due consideration to Mr. Rudolph's declaration since his more than 20 years of experience in the carbon-carbon industry well qualifies him as one of ordinary skill in the art. *In re Sullivan*, 498 F.3d 1345, 1352-53 (Fed. Cir. 2007) ("[W]hen an applicant puts forth relevant rebuttal evidence, as it did here, the Board must consider such evidence. . . . By failing to consider the submitted evidence, the Board thus committed error.").

### Claim Objection

In paragraph 4 of the Office Action, the Examiner has objected to claim 28 because the Applicant has allegedly failed to pay "the proper fee for adding a claim." (3/21/08 Office Action at 2). However, the Examiner has not explained what authority the Examiner is relying upon for this position. Claim 28 was previously cancelled and was re-presented in the reply filed by Applicants on February 20, 2008. There is currently 1 independent claim pending in the application—claim 24, and there are 18 dependent claims pending in the application—claims 25-42. Thus, the total number of claims for which a fee is due is 1 independent claim and 19 total claims.

Applicants respectfully submit that no additional fee is due for claim 28. "37 CFR 1.16(h) sets forth the excess claims fee for each independent claim in excess of three. 37 CFR 1.16(i) sets forth the excess claims fee for each claim (whether independent or dependent) in excess of twenty." MPEP § 607. "Upon submission of an amendment (whether entered or not) affecting the claims, payment of fees for those claims in excess

of the number previously paid for is required.” MPEP § 607. Accordingly, Applicants have already paid for consideration of at least 3 independent claims and 20 total claims with Applicants’ original filing fee. The number of claims currently presented for consideration is less than the number that Applicants have already paid for. Thus, Applicants request that this improper objection be withdrawn and that claim 28 be considered as presented.

### **Claim Rejections - Prior Art**

The Examiner has rejected claims 24-25, 29-35 and 36-39 under 35 U.S.C. § 102(b) as being anticipated by Christin et al. (U.S. Patent No. 5,904,957). The Examiner has also rejected claims 27, 37 and 41-42 under 35 U.S.C. § 103(a) as being unpatentable over Christin et al. The Examiner has also rejected claim 35 under 35 U.S.C. § 103(a) as being unpatentable over Christin et al. in view of Porter (U.S. Patent No. 5,626,680). The Examiner has also rejected claim 40 under 35 U.S.C. § 103(a) as being unpatentable over Christin et al. in view of Liu (U.S. Patent No. 6,403,491) and Porter. The Examiner has also rejected claim 26 under 35 U.S.C. § 103(a) as being unpatentable over Christin et al. in view of Murugesh (U.S. Patent No. 6,450,117).

Applicants have carefully considered the Examiner’s comments. However, Applicants respectfully submit that Christin et al. does not disclose the limitations of claim 24 under a reasonable interpretation of Applicants’ claim language and a proper understanding of the disclosure of Christin et al.

In particular, the Examiner incorrectly argues that Christin et al. discloses a sealed preheater as claimed by Applicants. Specifically, the Examiner asserts that Christin et al. discloses:

a sealed (compare with Applicant's element 18 Figure 1) preheater (20; Figure 2; column 6; lines 10-20) in communication with said inlet duct (16; Figure 2) and a discharge opening (holes in 20; Figure 2) of said preheater (20; Figure 2; column 6; lines 10-20), wherein substantially all of a gas flow entering said inlet duct (16; Figure 2) passes through said preheater (20; Figure 2; column 6; lines 10-20) and exits said discharge opening (holes in 20; Figure 2). [(3/21/08 Office Action at 3 (underlining added)).]

The Examiner further argues that “Applicant has not claimed anything more that [sic] an [sic] heater in an already ‘sealed’ chamber.” (3/21/08 Office Action at 14). It is respectfully submitted that this is a mischaracterization of what Applicants have claimed. Applicants have not merely claimed a “heater” in “an already sealed chamber.” Instead, Applicants have claimed a preheater that is itself sealed. (6/19/08 Rudolph Decl. ¶ 4).

In particular, the claim language requires a “sealed preheater” in which “substantially all of a gas flow entering said inlet duct passes through said preheater and exits said discharge opening” of the preheater. Thus, the proper interpretation of the sealed preheater that is claimed is that the incoming gas flow from the inlet duct cannot freely escape from the sides of the preheater. (6/19/08 Rudolph Decl. ¶ 3). Instead, substantially all of the incoming gas flows through the preheater and exits the preheater through the discharge openings of the preheater. (6/19/08 Rudolph Decl. ¶ 3).

For support of the Examiner’s position that substantially all of the gas flow in Christin et al. passes through the preheater, the Examiner cites to column 6, lines 10-20 of Christin et al. However, this passage from Christin et al. does not state that the preheater in Christin et al. is sealed. Instead, column 6, lines 12-14 of Christin et al. states that the preheating plates 20 are spaced apart from each other by “spacers 21.” Similarly, column 6, lines 18-19 states that the diffusing plate 22 rests on “legs 23.” Notably, as shown in Figure 2, spacers 21 and legs 23 are shown without cross-hatching, which indicates that these structures are formed of multiple spacers 21 and legs 23 that are spaced apart from each other around the circumference of the furnace. (6/19/08 Rudolph Decl. ¶ 5). By contrast, structures that are solid around the circumference of the furnace are shown in Figure 2 with cross-hatching (e.g., performs 12, support tray 15a, susceptor 19, diffusing plate 22). (6/19/08 Rudolph Decl. ¶ 5).

In fact, the Examiner has previously argued that the gas in Christin et al. can flow from the preheater through legs 23 to the chamber wall 19. (9/20/07 Office Action at 13). Thus, if the Examiner’s position is that the gas can escape through legs 23, the gas will also clearly escape through spacers 21. In further support of Applicants’

position that Christin et al. does not disclose the claimed sealed preheater, Applicants submit herewith a second declaration of Mr. Rudolph establishing how one of ordinary skill in the art would interpret the claimed preheater.

The Examiner also argues that Christin et al. discloses the claimed inlet opening which is in communication with the center opening region and the plurality of openings that are in communication with the outer region. Specifically, the Examiner asserts that Christin et al. discloses:

an inlet opening (holes of lowest 15, not labelled; Figure 2) extending through said base plate (15a; Figure 2) in communication with said discharge opening (holes in 20; Figure 2) and said center opening region (31; Figure 2); and a plurality of openings (openings in 15a; Figure 2) extending through said base plate (15a; Figure 2) in communication with said discharge opening (holes in 20; Figure 2) and said outer region (36; Figure 2), said plurality of openings (openings in 15a; Figure 2) being disposed around each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49- 58) and being in proximity to the entire outer region (36; Figure 2) of each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58). [(3/21/08 Office Action at 3-4 (underlining added)).]

As shown by the underlining above, the Examiner has argued that the holes 15a in Christin et al. satisfy both the claimed inlet opening and the plurality of openings. Essentially, the Examiner is arguing that a single structure in Christin et al. (holes 15a) is the same as two different claimed structures (the inlet opening and the plurality of openings).

However, the claim language clearly distinguishes that the inlet opening and the plurality of openings are two different structures with two entirely different purposes. In particular, the inlet opening is “in communication with . . . said center opening region.” By contrast, the plurality of openings are “in communication with . . . said outer region” and are “disposed around each of said stacks and being in proximity to the entire outer region of each of said stacks.” One embodiment of the claimed inlet opening 53 and the claimed plurality of openings 62, 74 is shown in Figure 4 of Applicants’ specification. As further shown in Figure 1 of Applicants’ specification, the inlet opening 53 is in communication with the center opening region 5, and the plurality of openings 62, 74 (shown in Figures 3 and 4) are in communication with

the outer region 11. Thus, Applicants' claim language clearly claims two different structures. Therefore, the Examiner cannot establish that these two structures are disclosed in Christin et al. by pointing to a single structure.

Moreover, the Examiner has failed to show how the holes 15a in Christin et al. satisfies the additional limitations that the claimed plurality of openings be "disposed around each of said stacks and being in proximity to the entire outer region of each of said stacks." This limitation was added to the claims to distinguish the Examiner's prior argument that the clearance gap around the base plate 15a in Christin et al. satisfied the claimed second portion of gas. As now claimed, the plurality of openings must be disposed "around each" stack and must be "in proximity to the entire outer region of each of said stacks." However, in Christin et al., the holes 15a are clearly shown directly below the center opening region of each stack. The holes 15a in Christin et al. are not disposed "around each" stack and are not "in proximity to the entire outer region" of each stack.

The Examiner also appears to improperly disregard the entire last clause of claim 24. The last clause of claim 24 provides further definition of the inlet opening and the plurality of openings as follows:

wherein a size of said inlet opening controls said gas flow to said center opening region wherein a predetermined first portion of said gas passes through said inlet opening to said center opening region and a remaining predetermined second portion passes below said top surface of said base plate and through said plurality of openings to said outer region.

The Examiner argues that this claim language is merely "intended use" and does not "result in a structural difference between the claimed invention and the prior art." (3/21/08 Office Action at 4-5). The Examiner has also disregarded Applicants' explanation of the differences between Christin et al. and the claimed invention by arguing that "such positions do not detract from the fact that the claimed structure is anticipated by Christin et al in terms of structure. When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent." (3/21/08 Office Action at 14-15 (emphasis by Examiner)).

First, as explained above, the Examiner has failed to show that Christin et al. discloses the same structure that is claimed in the other clauses of claim 24 that are specifically directed to the (1) sealed preheater; (2) inlet opening; and (3) plurality of openings. These three clauses by themselves distinguish the structure of the claimed invention from Christin et al.

Second, the last clause of claim 24 adds additional claim limitations that further define the structure of the claimed invention. Specifically, the “size of the inlet opening” controls the gas flow to the center opening region. This results in a predetermined first portion of gas passing through the “inlet opening to said center opening region.” The predetermined second portion of gas is required to pass “below said top surface of said base plate and through said plurality of openings to said outer region.”

Importantly, this claim language requires two different portions of gas—a first portion that passes through the inlet opening to the center opening region, and a second portion that passes through the plurality of openings to the outer region. Thus, the gas flow that exits the discharge opening of the sealed preheater (i.e., “substantially all” of the gas flow) is divided by the inlet opening and the plurality of openings into two predetermined portions. The first portion passes through the inlet opening to the center opening region and is controlled by the size of the inlet opening. The second portion passes “below” the base plate and through the plurality of openings to the outer region.

Applicants’ claim language clearly distinguishes the disclosure of Christin et al. As stated in Christin et al.:

The preheated gas coming from the diffuser plate 22 is channeled towards the volume constituted by the interior passages 31 of the stacks 30. To this end, the blocks 25 between the diffuser plate 22 and the bottom support tray 15a are constituted by rings of diameter equal to or slightly greater than the diameter of the holes 15 and they are in alignment therewith so that the gas is directed exclusively into the passages 31. The diffuser plate 22 is provided with perforations 22a solely in register with the passages 31. [(Col. 6, lines 49-57 (emphasis added)).]

As also shown by the gas flow arrows through ring block 25 and holes 15a in Figure 2 of Christin et al., **ALL** of the gas that passes through ring block 25 flows to the center region 31. Thus, the structure disclosed in Christin et al. does not divide the gas into two different portions as claimed by Applicants. As recognized by the MPEP, it is

improper for the Examiner to reject a claim based on a proposed modification of the prior art that would change the principle of operation of the reference or render the prior art unsatisfactory of its intended purpose. MPEP § 2143.01. As clearly stated and shown in Christin et al., the intended purpose of Christin et al. is to direct all of the gas solely to the center opening region—not to divide the gas into two predetermined portions as claimed by Applicants, where an inlet opening is in communication with the center opening region and a plurality of openings are in communication with the outer region. It is also well-established that functional limitations are “perfectly acceptable” when they “set definite boundaries on the patent protection sought.” *In re Barr*, 444 F.2d 588 (CCPA 1971). In the present case, it is respectfully submitted that the last clause of claim 24 provides further definition to the claimed invention with definite boundaries, and thus, the Examiner must consider all of the recited limitations that are claimed.

The prior art of record also fails to disclose the additional limitations of dependent claims 25-42. Because each of these claims incorporate all of the limitations of allowable claim 24 from which they depend, claims 25-42 are also allowable. Therefore, any further arguments that could be made at this time in support of the additional limitations of Applicants’ dependent claims would be superfluous and are unnecessary. *In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988); *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1555 (Fed. Cir. 1983).

## **Conclusion**

None of the prior art of record discloses the limitations of Applicants’ claims. As explained above, Applicants’ claims are limited to a furnace with a sealed preheater, where one portion of gas passes to the center opening region of each stack in the furnace and another portion passes to the entire outer region of each stack. It is respectfully submitted that none of the prior art of record discloses the limitations of Applicants’ claims as now presented. Therefore, Applicants’ claims are allowable. If the Examiner has any questions, the Examiner may call Applicants’ attorney, Richard E. Stanley, Jr., at 312-321-4279. Accordingly, Applicants request reconsideration and allowance of the application.

Respectfully submitted,

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